

12M. Brake master cylinder - monowheel

Overview

The single wheel requires only one brake, of course, which is hand operated. The brake lever, which emerges through a slot in the top of the wheel well tunnel, is directly connected to a 'single-shot' brake master cylinder. (Single-shot means that no reservoir is used). The master cylinder is to be mounted on the inside of the wheel well's starboard side wall with two set screws.

Step 1

Brake lever

The lever supplied with the master cylinder which operates the piston is too short for its application in the Europa so a longer lever LG13 is provided. Exchange the levers having noted that the hole positions at the pivot end of both levers are the same. See figure 1.

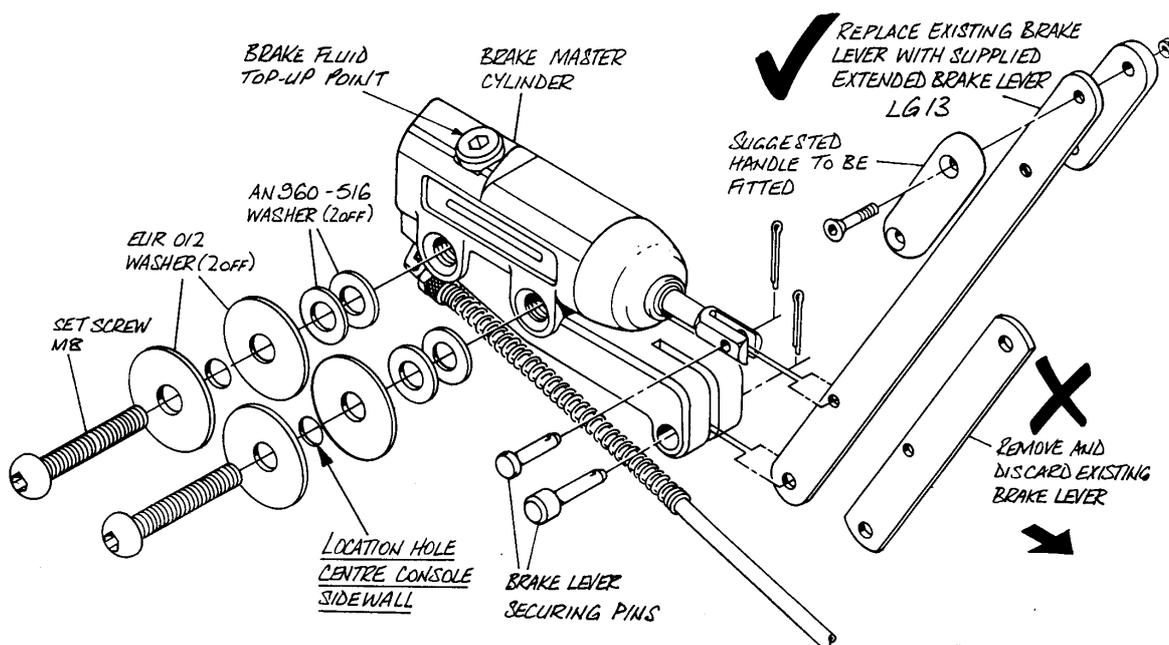


Fig 1. Brake master cylinder arrangement.

Note: The piston is being pushed by a spring, which acts to let the brake off. When exchanging the levers the piston will try to push out of the cylinder. Take great care not to lose any parts or damage the seals when reassembling the unit.

To avoid the piston coming out at all when making the exchange, push the piston in enough to thread a piece of wire between the fork sides and tie the ends around the body.



Step 2

Mounting bolt holes.

Mark the hole centres for the two master cylinder mounting bolts onto the starboard side of the cockpit module wheel well and drill two holes right through no larger than 5mm. See figure 2.

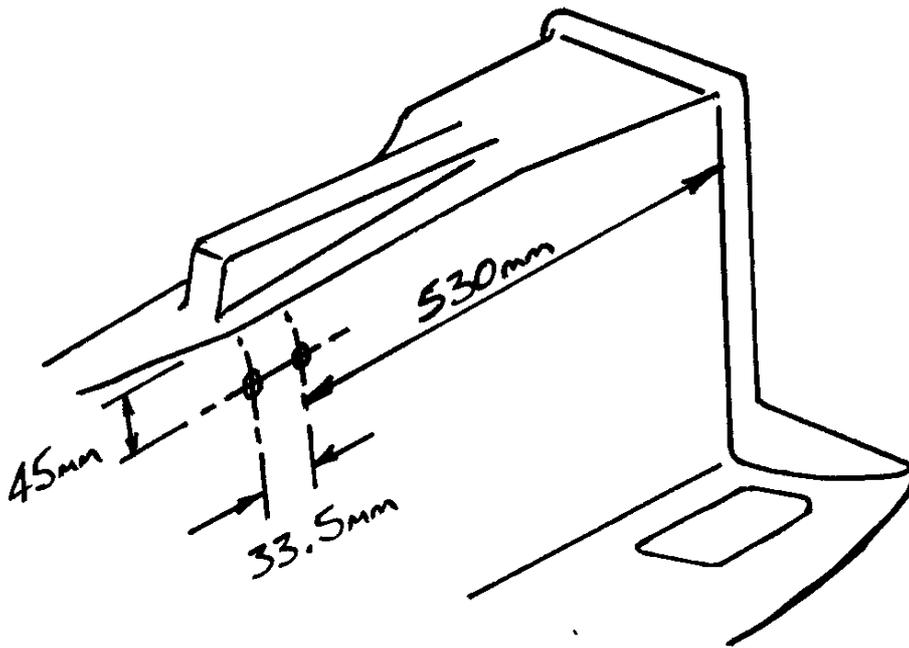


Fig 2. Dimensions for brake master cylinder mounting holes.

Step3

The master cylinder is to be mounted with the lever at the front, requiring a pull to operate the brake.

Make a slot through the top of the wheel well to allow the lever through making it long enough to accommodate the lever's full range of movement.

Step 4

Next, cut a hole aft of the slot, directly above where the filler plug will be, to enable easy access to top-up brake fluid. Find a suitable easily removable blanking plug to cover the hole.



Step 5

Before fitting the master cylinder, attach the supplied hose to the elbow fitting. Remove the nut which is on the elbow and discard it, then screw on the hose. The seal is made automatically upon tightening the nut.

Open up the original holes in the cockpit module's wheel well with an 8mm drill then, referring to fig. 1, bolt the master cylinder to the inside surface using the two dome headed 8mm set screws. Place an EUR 012 wide area washer on the screws each side of the wheel well side wall and use two AN960-516 standard washers on each bolt to space the master cylinder away from the structure.

Step 6

Make a handle for the lever as required. A hole is provided if a button type is to be used. A second hole lower down the lever may be drilled if a longer shaft type handle is preferred.

The lever may require a bend in it to bring it closer to vertical.

Connection to the slave cylinder, filling with fluid and bleeding air from the system is detailed after fitting the main wheel.

Note: *No parking brake valve is provided but one could be fitted if required.*

If you do choose to fit a parking brake valve it is worth pointing out here a note of caution. A simple valve which can be either on or off should be used with care. If the valve is closed, no amount of pulling on the lever will alter the state of the brake, on or off.

A one way valve, which can be switched on for parking but allow more pressure to reach the brakes when required, is the desirable option.

You may also consider mechanical means of holding the lever to keep the brake applied but do make sure that whichever method you decide on the brake cannot be applied in flight.



INTENTIONALLY BLANK